



SEQUENCE LISTING

<110> SAITO, AKIRA
KURODA, MASAHIKO

<120> NOVEL ONCOGENE, RECOMBINANT PROTEIN DERIVED THEREFROM,
AND USES THEREOF

<130> Q79447

<140> 10/758,562

<141> 2004-01-16

<150> JP 2003-011478

<151> 2003-01-20

<160> 30

<170> PatentIn Ver. 3.2

<210> 1

<211> 1190

<212> PRT

<213> Homo sapiens

<400> 1

Met Thr Ser Arg Phe Gly Lys Thr Tyr Ser Arg Lys Gly Gly Asn Gly
1 5 10 15

Ser Ser Lys Phe Asp Glu Val Phe Ser Asn Lys Arg Thr Thr Leu Ser
20 25 30

Thr Lys Trp Gly Glu Thr Thr Phe Met Ala Lys Leu Gly Gln Lys Arg
35 40 45

Pro Asn Phe Lys Pro Asp Ile Gln Glu Ile Pro Lys Lys Pro Lys Val
50 55 60

Glu Glu Glu Ser Thr Gly Asp Pro Phe Gly Phe Asp Ser Asp Asp Glu
65 70 75 80

Ser Leu Pro Val Ser Ser Lys Asn Leu Ala Gln Val Lys Cys Ser Ser
85 90 95

Tyr Ser Glu Ser Ser Glu Ala Ala Gln Leu Glu Glu Val Thr Ser Val
100 105 110

Leu Glu Ala Asn Ser Lys Ile Ser His Val Val Val Glu Asp Thr Val
115 120 125

Val Ser Asp Lys Cys Phe Pro Leu Glu Asp Thr Leu Leu Gly Lys Glu
130 135 140

Lys Ser Thr Asn Arg Ile Val Glu Asp Asp Ala Ser Ile Ser Ser Cys
145 150 155 160

Asn Lys Leu Ile Thr Ser Asp Lys Val Glu Asn Phe His Glu Glu His
 165 170 175
 Glu Lys Asn Ser His His Ile His Lys Asn Ala Asp Asp Ser Thr Lys
 180 185 190
 Lys Pro Asn Ala Glu Thr Thr Val Ala Ser Glu Ile Lys Glu Thr Asn
 195 200 205
 Asp Thr Trp Asn Ser Gln Phe Gly Lys Arg Pro Glu Ser Pro Ser Glu
 210 215 220
 Ile Ser Pro Ile Lys Gly Ser Val Arg Thr Gly Leu Phe Glu Trp Asp
 225 230 235 240
 Asn Asp Phe Glu Asp Ile Arg Ser Glu Asp Cys Ile Leu Ser Leu Asp
 245 250 255
 Ser Asp Pro Leu Leu Glu Met Lys Asp Asp Asp Phe Lys Asn Arg Leu
 260 265 270
 Glu Asn Leu Asn Glu Ala Ile Glu Glu Asp Ile Val Gln Ser Val Leu
 275 280 285
 Arg Pro Thr Asn Cys Arg Thr Tyr Cys Arg Ala Asn Lys Thr Lys Ser
 290 295 300
 Ser Gln Gly Ala Ser Asn Phe Asp Lys Leu Met Asp Gly Thr Ser Gln
 305 310 315 320
 Ala Leu Ala Lys Ala Asn Ser Glu Ser Ser Lys Asp Gly Leu Asn Gln
 325 330 335
 Ala Lys Lys Gly Gly Val Ser Cys Gly Thr Ser Phe Arg Gly Thr Val
 340 345 350
 Gly Arg Thr Arg Asp Tyr Thr Val Leu His Pro Ser Cys Leu Ser Val
 355 360 365
 Cys Asn Val Thr Ile Gln Asp Thr Met Glu Arg Ser Met Asp Glu Phe
 370 375 380
 Thr Ala Ser Thr Pro Ala Asp Leu Gly Glu Ala Gly Arg Leu Arg Lys
 385 390 395 400
 Lys Ala Asp Ile Ala Thr Ser Lys Thr Thr Thr Arg Phe Arg Pro Ser
 405 410 415
 Asn Thr Lys Ser Lys Lys Asp Val Lys Leu Glu Phe Phe Gly Phe Glu
 420 425 430
 Asp His Glu Thr Gly Gly Asp Glu Gly Gly Ser Gly Ser Ser Asn Tyr
 435 440 445
 Lys Ile Lys Tyr Phe Gly Phe Asp Asp Leu Ser Glu Ser Glu Asp Asp
 450 455 460

Glu Asp Asp Asp Cys Gln Val Glu Arg Lys Thr Ser Lys Lys Arg Thr
 465 470 475 480
 Lys Thr Ala Pro Ser Pro Ser Leu Gln Pro Pro Pro Glu Ser Asn Asp
 485 490 495
 Asn Ser Gln Asp Ser Gln Ser Gly Thr Asn Asn Ala Glu Asn Leu Asp
 500 505 510
 Phe Thr Glu Asp Leu Pro Gly Val Pro Glu Ser Val Lys Lys Pro Ile
 515 520 525
 Asn Lys Gln Gly Asp Lys Ser Lys Glu Asn Thr Arg Lys Ile Phe Ser
 530 535 540
 Gly Pro Lys Arg Ser Pro Thr Lys Ala Val Tyr Asn Ala Arg His Trp
 545 550 555 560
 Asn His Pro Asp Ser Glu Glu Leu Pro Gly Pro Pro Val Val Lys Pro
 565 570 575
 Gln Ser Val Thr Val Arg Leu Ser Ser Lys Glu Pro Asn Gln Lys Asp
 580 585 590
 Asp Gly Val Phe Lys Ala Pro Ala Pro Pro Ser Lys Val Ile Lys Thr
 595 600 605
 Val Thr Ile Pro Thr Gln Pro Tyr Gln Asp Ile Val Thr Ala Leu Lys
 610 615 620
 Cys Arg Arg Glu Asp Lys Glu Leu Tyr Thr Val Val Gln His Val Lys
 625 630 635 640
 His Phe Asn Asp Val Val Glu Phe Gly Glu Asn Gln Glu Phe Thr Asp
 645 650 655
 Asp Ile Glu Tyr Leu Leu Ser Gly Leu Lys Ser Thr Gln Pro Leu Asn
 660 665 670
 Thr Arg Cys Leu Ser Val Ile Ser Leu Ala Thr Lys Cys Ala Met Pro
 675 680 685
 Ser Phe Arg Met His Leu Arg Ala His Gly Met Val Ala Met Val Phe
 690 695 700
 Lys Thr Leu Asp Asp Ser Gln His His Gln Asn Leu Ser Leu Cys Thr
 705 710 715 720
 Ala Ala Leu Met Tyr Ile Leu Ser Arg Asp Arg Leu Asn Met Asp Leu
 725 730 735
 Asp Arg Ala Ser Leu Asp Leu Met Ile Arg Leu Leu Glu Leu Glu Gln
 740 745 750
 Asp Ala Ser Ser Ala Lys Leu Leu Asn Glu Lys Asp Met Asn Lys Ile
 755 760 765

Lys Glu Lys Ile Arg Arg Leu Cys Glu Thr Val His Asn Lys His Leu
 770 775 780
 Asp Leu Glu Asn Ile Thr Thr Gly His Leu Ala Met Glu Thr Leu Leu
 785 790 795 800
 Ser Leu Thr Ser Lys Arg Ala Gly Asp Trp Phe Lys Glu Glu Leu Arg
 805 810 815
 Leu Leu Gly Gly Leu Asp His Ile Val Asp Lys Val Lys Glu Cys Val
 820 825 830
 Asp His Leu Ser Arg Asp Glu Asp Glu Glu Lys Leu Val Ala Ser Leu
 835 840 845
 Trp Gly Ala Glu Arg Cys Leu Arg Val Leu Glu Ser Val Thr Val His
 850 855 860
 Asn Pro Glu Asn Gln Ser Tyr Leu Ile Ala Tyr Lys Asp Ser Gln Leu
 865 870 875 880
 Ile Val Ser Ser Ala Lys Ala Leu Gln His Cys Glu Glu Leu Ile Gln
 885 890 895
 Gln Tyr Asn Arg Ala Glu Asp Ser Ile Cys Leu Ala Asp Ser Lys Pro
 900 905 910
 Leu Pro His Gln Asn Val Thr Asn His Val Gly Lys Ala Val Glu Asp
 915 920 925
 Cys Met Arg Ala Ile Ile Gly Val Leu Leu Asn Leu Thr Asn Asp Asn
 930 935 940
 Glu Trp Gly Ser Thr Lys Thr Gly Glu Glu Asp Gly Leu Ile Gly Thr
 945 950 955 960
 Ala Leu Asn Cys Val Leu Gln Val Pro Lys Tyr Leu Pro Gln Glu Gln
 965 970 975
 Arg Phe Asp Ile Arg Val Leu Gly Leu Gly Leu Leu Ile Asn Leu Val
 980 985 990
 Glu Tyr Ser Ala Arg Asn Arg His Cys Leu Val Asn Met Glu Thr Ser
 995 1000 1005
 Cys Ser Phe Asp Ser Ser Ile Cys Ser Gly Glu Gly Asp Asp Ser Leu
 1010 1015 1020
 Arg Ile Gly Gly Gln Val His Ala Val Gln Ala Leu Val Gln Leu Phe
 1025 1030 1035 1040
 Leu Glu Arg Glu Arg Ala Ala Gln Leu Ala Glu Ser Lys Thr Asp Glu
 1045 1050 1055
 Leu Ile Lys Asp Ala Pro Thr Thr Gln His Asp Lys Ser Gly Glu Trp
 1060 1065 1070

Gln Glu Thr Ser Gly Glu Ile Gln Trp Val Ser Thr Glu Lys Thr Asp
 1075 1080 1085

Gly Thr Glu Glu Lys His Lys Lys Glu Glu Glu Asp Glu Glu Leu Asp
 1090 1095 1100

Leu Asn Lys Ala Leu Gln His Ala Gly Lys His Met Glu Asp Cys Ile
 1105 1110 1115 1120

Val Ala Ser Tyr Thr Ala Leu Leu Leu Gly Cys Leu Cys Gln Glu Ser
 1125 1130 1135

Pro Ile Asn Val Thr Thr Val Arg Glu Tyr Leu Pro Glu Gly Asp Phe
 1140 1145 1150

Ser Ile Met Thr Glu Met Leu Lys Lys Phe Leu Ser Phe Met Asn Leu
 1155 1160 1165

Thr Cys Ala Val Gly Thr Thr Gly Gln Lys Ser Ile Ser Arg Val Ile
 1170 1175 1180

Glu Tyr Leu Glu His Cys
 1185 1190

<210> 2

<211> 3570

<212> DNA

<213> Homo sapiens

<400> 2

atgacatcca	gatttgggaa	aacatacagt	aggaaagggtg	gaaatggcag	ttcaaaattc	60
gatgaagtct	tttccaacaa	acggactacc	cttagcacaa	aatggggaga	gaccacattt	120
atggctaaat	tagggcagaa	gaggcccaat	ttcaaaccag	atatccaaga	aattccgaag	180
aaacctaaag	tggaagaaga	aagtactgga	gattcctttt	gatttgatag	tgatgatgag	240
tctctaccag	tttcttcaaa	gaatttagcc	caggttaagt	gttcctctta	ttcagaatct	300
agtgaagctg	ctcagttgga	agaggtcact	tcagtacttg	aagctaatag	caaaattagt	360
catgtggctg	ttgaagacac	tgctggtttc	gataaatgct	tccctttgga	ggacacttta	420
cttgggaaag	aaaagagcac	aaaccgaatt	gtagaagatg	atgcaagcat	aagtagctgt	480
aataaattaa	taacttcaga	taaagtggag	aattttcatg	aagaacatga	aaagaatagt	540
caccatattc	acaaaaatgc	tgatgacagt	actaagaaac	ccaatgcaga	aactacagtg	600
gcttctgaaa	tcaaggaaac	aaatgatact	tggaactccc	agtttgggaa	aaggccagaa	660
tcaccatcag	aaatatctcc	aatcaaggga	tctgttagaa	ctggtttggt	tgaatgggat	720
aatgattttg	aagatatcag	atcagaagac	tgtattttta	gtttggatag	tgatcccctt	780
ttggagatga	aggatgacga	ttttaaaaa	cgattggaaa	atctgaatga	agccattgag	840
gaagatatgg	tacaaagtgt	tcttaggcca	accaactgta	ggacgtactg	tagggccaat	900
aaaacgaaat	cctcccaagg	agcatcaaat	tttgataagc	tgatggacgg	caccagtcag	960
gccttagcca	aagcaaacag	tgaatcgagt	aaagatggcc	tgaatcaggc	aaagaaaggg	1020
ggtgtaagtt	gtgggaccag	ttttagaggg	acagttggac	ggactagaga	ttacactggt	1080
ttacatccat	cttgcttgct	agtgtgtaat	gttaccatac	aggatactat	ggaacgcagc	1140
atggatgagt	tactgcatc	cactcctgca	gatttgggag	aagctggtcg	tctcagaaaa	1200
aaggcagata	ttgcaacttc	taagactact	actagatttc	gacctagtaa	tactaaatcc	1260
aaaaaggatg	ttaaacttga	attttttggt	tttgaagatc	atgagacagg	aggtgatgaa	1320
ggaggttctg	gaagttctaa	ttacaâaaat	aagtattttg	gctttgatga	tctcagtga	1380
agcgaagatg	atgaagatga	tgactgtcaa	gtagaagaa	agacaagcaa	aaaaagaact	1440
aaaacagctc	catcaccctc	cttcagcct	ccccagaaa	gcaatgataa	ttcccaggac	1500
agtcagttctg	gtactaacia	tgcaaaaaac	ttggatttta	cagaggactt	gcctgggtgtg	1560

```

cctgaaagtg tgaagaagcc cataaataaa caaggagata aatcaaagga aaataccaga 1620
aagatttttta gtggccccaa acggtcaccc acaaaagctg tatataatgc cagacattgg 1680
aatcatccag attcagaaga actgcctggg ccaccagtag taaaacctca gagtgtcaca 1740
gtgaggctgt cttcaaagga accaaatcaa aaagatgatg gagtttttaa ggctcctgca 1800
ccaccatcca aagtgataaa aactgtgaca atacctactc agccctacca agatatagtt 1860
actgcactga aatgcagacg agaagacaaa gaattatata ctgttggttca gcacgtgaag 1920
cacttcaacg atgtttaga atttggtgaa aatcaagagt tcactgatga cattgagtac 1980
ttgttaagtg gcttaaagag cactcagcct ctaaacacac gttgccttag tgttattagc 2040
ttggctacta aatgtgccat gccagtttt cgaatgcacc tgagagcaca tgggatggta 2100
gcaatggtct ttaaaacctt ggatgattcc cagcaccatc agaactctgtc cctctgtaca 2160
gctgccctca tgtatatact gagtagagat cgtttgaaca tggatcttga tagagctagc 2220
ttagatctaa tgattcgact ttgggaactg gaacaagatg cttcatcagc caagctactg 2280
aatgaaaaag acatgaacaa aattaaagaa aaaatccgaa ggctctgtga aactgtacac 2340
aacaagcatc ttgatctaga aaatataacg actgggcatt tagctatgga gacattatta 2400
tcccttactt ctaaacgagc aggagactgg tttaaagaag aactccggtc tttgggtggg 2460
ctggatcata ttgtagataa agtaaaagaa tgtgtggatc atttaagtag agatgaggat 2520
gaagagaaac tggtagcctc actatgggga gcagagagat gtttacgagt tttagaaagt 2580
gtaactgtgc ataatcccga aaatcaaagc tacttgatag catataaaga ttcccaactt 2640
attgtttcat cagctaaagc attacagcat tgtgaagaac tgattcagca gtacaaccgt 2700
gctgaggaca gcatatgctt agctgacagt aagcctctgc ctcaccagaa tgtaactaac 2760
catgtaggca aagcagtgga ggactgcatg agggccatca tcggggtgtt gcttaattta 2820
actaatgata atgagtgggg cagcaccaaa acaggagagc aggacggtct cataggcaca 2880
gcgctgaact gtgtgcttca ggttccaaag tacctacctc aggagcagag atttgatatt 2940
cgagtgtcgg gcttaggtct gctgataaat ctagtggagt atagtgtctg gaatcggcac 3000
tgtcttgtca acatggaaac atcgtgctct tttgattctt ccatctgtag tggagaaggg 3060
gatgatagtt taaggatagg tggacaagtt catgctgtcc aggctttagt gcagctattc 3120
cttgagcgag agcgggcagc ccagctagca gaaagtaaaa cagatgagtt gatcaaagat 3180
gctcccacca ctcagcatga taagagtgga gagtggcaag aaacaagtgg agaaatacag 3240
tgggtgtcaa ctgaaaagac tgatggtaca gaagagaaac ataagaagga ggaggaggat 3300
gaagaacttg acctcaataa agcccttcag catgccggca aacacatgga ggattgcatt 3360
gtggcctcct acacggcact acttcttggg tgtctctgcc aggaaagtcc aatcaatgta 3420
accactgtgc ggggaatatct gccagaagga gacttttcaa taatgacaga gatgctcaaa 3480
aaatttttga gttttatgaa tctcacttgt gctgttggaa caactggcca gaaatctatc 3540
tctagagtga ttgaatattt ggaacattgc 3570

```

<210> 3

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 3

ttggatccat gacatccaga tttgggaaaa catacagtag g

41

<210> 4

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 4
 ttgaattcct agcaatgttc caaatattca atcactctag a 41

<210> 5
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 5
 gaattcatag gcacagcgct gaactgtgtg 30

<210> 6
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 6
 ttgaattcct agcaatgttc caaatattca 30

<210> 7
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: short
 interfering nucleotide sequence

<400> 7
 cggactaccc ttagcacia 19

<210> 8
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 8
 ttggatccat gacatccaga tttgggaaaa catacagtag g 41

<210> 9
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 9

ttgaattcct agcaatgttc caaatattca atcactctag a

41

<210> 10

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 10

gggaaatcgt gcgtgacatt aag

23

<210> 11

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 11

tgtgttggcg tacaggtctt tg

22

<210> 12

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 12

aaaaagcagg ctccaccatg tttcaggacc cacaggagcg accc

44

<210> 13

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 13

agaaagctgg gttacagctg gggtttctcta cgtg

34

<210> 14
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 14
 aaaaagcagg ctccaccatg catggagata cacctacat

39

<210> 15
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 15
 agaaaagctgg gttatggttt ctgagaacag atggggg

36

<210> 16
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 16
 aaaaagcagg ctccaccatg gagacagcat gcgaac

36

<210> 17
 <211> 36
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 17
 agaaagctgg gtcagaagtc caagctggct gtaaag

36

<210> 18
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 18
ggggacaagt ttgtacaaaa aagcaggct

29

<210> 19
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 19
ggggacaagt ttgtacaaga aagctgggt

29

<210> 20
<211> 18
<212> PRT
<213> Homo sapiens

<400> 20
Cys Asn Phe Lys Pro Asp Ile Gln Glu Ile Pro Lys Lys Pro Lys Val
1 5 10 15

Glu Glu

<210> 21
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 21
gtgcatccca cccacagtgg aagacatgg

29

<210> 22
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 22
ccgcttcgc cggtgaatgg tcagtgtggtg

30

<210> 23
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 control oligonucleotide

<400> 23
 actacaactg gtcgcaacc 19

<210> 24
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 24
 aacggactac ccttagcaca acctgtctc 29

<210> 25
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 25
 aattgtgcta agggtagtcc gcctgtctc 29

<210> 26
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 26
 aaactacaac tggtcgcaac ccctgtctc 29

<210> 27
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 27
aaggttgcgga ccagttgtag tctgtctc

29

<210> 28
<211> 6307
<212> DNA
<213> Homo sapiens

<400> 28
gcgagcggct gttggaggaa ggaggtgggg gccgggagcg caaatggcgt tgagatggty 60
carggccctg ttcaaaactcc agcactgacc attcaccggc ggaagcggcg gcgcaggagg 120
cggcggcgcg ccagcggggg cacacagcag gctctgttac cagctccagc agtggcggcc 180
agcgagagct agggcccgsgc ccggccggcg gcgctcgagg cggggaggga agttgcgggg 240
ccgccgctcc tgcccccca accgggcttc ctatttaccg aaagcagagt ccctcgcctc 300
tctcggctct cacctgccgg cctgctctc ccgcgcgagg gttccgcgcc cgcccgcggg 360
ccgtarggag cgggagaagg cggargcggc cccgtggcca aagcaccgc caggcttccg 420
aggagaatat gaaactggtg tcaaaatgac atccagattt gggaaaacat acagtaggaa 480
aggtggaaat ggaggttcaa aattcgatga agtcttttcc aacaaacgga ctaccttag 540
cacaaaatgg ggagagacca catttatggc taaattaggg cagaagaggc ccaatttcaa 600
accagatatc caagaaattc cgaagaaacc taaagtggaa gaagaaagta ctggagatcc 660
ttttggattt gatagtgatg atgagtctct accagtttct tcaaagaatt tagcccagg 720
taagtgttcc tcttattcag aatctagtga agctgtcag ttggaagagg tcacttcagt 780
acttgaagct aatagcaaaa ttagtcatgt ggtcgttgaa gacactgtcg tttctgataa 840
atgcttccct ttggaggaca ctttacttgg gaaagaaaag agcacaaacc gaattgtaga 900
agatgatgca agcataagta gctgtaataa attaataact tcagataaag tggagaattt 960
tcatgaagaa catgaaaaga atagtcacca tattcacaaa aatgctgatg acagtactaa 1020
gaaacccaat gcagaaacta cagtggcttc tgaaatcaag gaaacaaatg atacttgga 1080
ctcccagttt gggaaaaggc cagaatcacc atcagaaata tctccaatca agggatctgt 1140
tagaactggt ttgtttgaat gggataatga ttttgaagat atcagatcag aagactgtat 1200
tttaagtgtg gatagtgatc cccttttggg gatgaaggat gacgatttta aaaatcgatt 1260
ggaaaatctg aatgaagcca ttgaggaaga tattgtacaa agtgttctta ggccaaccaa 1320
ctgtaggacg tactgtaggg ccaataaaac gaaatcctcc caaggagcat caaattttga 1380
taagctgatg gacggcacca gtcaggcctt agccaaagca aacagtgaat cgagtaaaga 1440
tggcctgaat caggcaaaga aaggggtgt aagttgtggg accagtttta gagggacagt 1500
tggaaggact agagattaca ctgttttaca tccatcttgc ttgtcagttt gtaatgttca 1560
catagaggat actatggaac gcagcatgga tgagttcact gcatccactc ctgcagattt 1620
gggagaagct ggtcgtctca gaaaaaaggc agatattgca acttctaaga ctactactag 1680
atttcgacct agtaatacta aatccaaaaa ggatgttaaa cttgaatttt ttggttttga 1740
agatcatgag acaggagggtg atgaaggagg ttctggaagt tctaattaca aaattaagta 1800
ttttggcttt gatgatctca gtgaaagcga agatgatgaa gatgatgact gtcaagtaga 1860
aagaaagaca agcaaaaaaa gaactaaaac agctccatca cctccttgc agcctcccc 1920
agaaagcaat gataattccc aggacagtca gtctggtact aacaatgcag aaaacttggg 1980
ttttacagag gacttgctg gtgtgcctga aagtgtgaag aagcccataa ataaacaagg 2040
agataaatca aaggaaaata ccagaaagat ttttagtggc cccaaacggg caccacaaa 2100
agctgtatat aatgccagac attggaatca tccagattca gaagaactgc ctgggccacc 2160
agtagtaaaa cctcagagtg tcacagttag gctgtcttca aaggaaccaa atcaaaaaga 2220
tgatggagtt ttttaaggctc ctgcaccacc atccaaagtg ataaaaactg tgacaatacc 2280
tactcagccc taccaagata tagttactgc actgaaatgc agacgagaag acaagaatt 2340
atatactgtt gttcagcacg tgaagcactt caacgatgtt gtagaatttg gtgaaaatca 2400
agagttcact gatgacattg agtacttggt aagtggttca aagagcactc agcctctaaa 2460
cacacgttgc cttagtgtta ttagcttggc tactaaatgt gccatgccc gttttcgaat 2520
gcacctgaga gcacatggga tggtagcaat ggtctttaa accttggatg attcccagca 2580
ccatcagaat ctgtccctct gtacagctgc cctcatgtat atactgagta gagatcgttt 2640
gaacatggat cttgatagag cttagcttaga tctaattgatt cgacttttgg aactggaaca 2700
agatgcttca tcagccaagc tactgaatga aaaagacatg aacaaaatta aagaaaaaat 2760
ccgaaggctc tgtgaaactg tacacaacaa gcactctgat ctagaaaata taacgactgg 2820

gcatttagct	atggagacat	tattatccct	tactttctaaa	cgagcaggag	actggtttaa	2880
agaagaactc	cggcttttgg	gtggtctgga	tcatattgta	gataaagtaa	aagaatgtgt	2940
ggatcattta	agtagagatg	aggatgaaga	gaaactggta	gcctcactat	ggggagcaga	3000
gagatgttta	cgagttttag	aaagtgtaac	tgtgcataat	cccgaaaatc	aaagctactt	3060
gatagcatat	aaagattccc	aacttattgt	ttcatcagct	aaagcattac	agcattgtga	3120
agaactgatt	cagcagtaca	accgtgctga	ggacagcata	tgcttagctg	acagtaagcc	3180
tctgcctcac	cagaatgtaa	ctaaccatgt	aggcaaagca	gtggaggact	gcatgagggc	3240
catcatcggg	gtgttgctta	atttaactaa	tgataatgag	tggggcagca	ccaaaacagg	3300
agagcaggac	ggtctcatag	gcacagcgct	gaactgtgtg	cttcagggtt	caaagtacct	3360
acctcaggag	cagagatttg	atattcgagt	gctgggctta	ggtctgctga	taaatctagt	3420
ggagtatatg	gctcggaatc	ggcactgtct	tgtcaacatg	gaaacatcgt	gctcttttga	3480
ttcttccatc	tgtagtggag	aaggggatga	tagtttaagg	ataggtggac	aagttcatgc	3540
tgtccaggct	ttagtgcagc	tattccttga	gagagagcgg	gcagcccagc	tagcagaaaag	3600
taaaacagat	gagttgatca	aagatgctcc	caccactcag	catgataaga	gtggagagtg	3660
gcaagaaaca	agtggagaaa	tacagtgggt	gtcaactgaa	aagactgatg	gtacagaaga	3720
gaaacataag	aaggaggagg	aggatgaaga	acttgacctc	aataaagccc	ttcagcatgc	3780
cggcaaacac	atggaggatt	gcattgtggc	ctcctacacg	gcactacttc	ttgggtgtct	3840
ctgccaggaa	atgccaatca	atgtaaccac	tgtgcgggaa	tatctgccag	aaggagactt	3900
ttcaataatg	acagagatgc	tcaaaaaaatt	tttgagtttt	atgaatctca	cttgtgctgt	3960
tggaacaact	ggccagaaat	ctatctctag	agtgattgaa	tatttggaac	attgctagct	4020
gctttacctt	tgcttcagggt	gctcggtaat	gctggagcta	tccttagaca	aagaaaagtc	4080
aagtcatgaa	agaagtcctt	gaagatatac	caagaacatt	catcagtatc	attcgtgttt	4140
ggatttttaa	ggccacctga	tttcttcgtc	atgcattcgg	catttgctaa	atgacagtta	4200
ctacatcaat	ctgcaactat	caaaaatgag	gggaaaagggt	tcaggctgtt	aacaactcca	4260
tcagtatatt	aaatacattt	actttggcag	agtttatacc	ctccccttgt	tttcttgctt	4320
tattctgggc	aagtttgaag	gggaaaattt	gtgctgctgt	tagtgcaact	gctgtgtatg	4380
ttgagccact	gttgatcatg	cagccagggtg	caaaggcagc	ttagctactg	aggtagcgaa	4440
tgttctgagg	acattctaga	caacagctta	gttccttttt	caggctcatt	tgcttttgct	4500
tttttgttga	atgattccaa	tcgtaaataa	agcttttaat	aattttgtga	attttttggt	4560
tggtgttccc	tgaactactg	tctatatatta	aaattagatg	gaatccaaag	atacagggga	4620
ttaatagtag	atttttttat	tcttgattag	gtttgggtta	ttgaactatt	ttttactttt	4680
gagaccacaa	ccatattcaa	tatcatacca	taatgtgtca	tagctatagg	cacaagaaaa	4740
acaacagttt	gagagaatat	tatataagat	gatgtgccct	gttaaaagga	ggaggcaaaa	4800
tagtcaaacc	cagggtagtt	tacacttaat	gctagggagg	ctcttaaaac	attattagat	4860
tttgaggaaa	gactctctag	atatattttc	taatgttcag	tacaataaat	ataaggaagc	4920
taaaacacca	atgtggaatt	cctgtttcca	gataacatgt	atattcttct	atagagtgc	4980
aggatcaaat	gcataagcgc	aaagccttaa	attgctgggt	tagagaagac	cctttttcca	5040
ttcagattct	ttgttcgtag	agcagttatt	tgaaaaacag	ttatggaaca	caaaacattt	5100
tatagattta	atatcataac	attgcaaatt	tttcttgat	tattgttcac	accactgggt	5160
atactttttt	ttttcctttt	ttattgattg	ggcctgaata	caggctttct	agagatcttt	5220
ttcathtaata	cttttaaaata	cctttcagggt	agttacatca	tgtttcttca	ttggatttgt	5280
aaaacttgaa	gccataaaaa	tattagtttg	gtgtgtattg	gggaaaatag	ctaaaagtct	5340
aattttttac	catttagact	ttgttatttc	cttgataaaa	gtgacaaaac	ggggctcttg	5400
tatcagtgcc	agctgtaatg	tttttaaatg	cagtggctgc	cttctattgt	cttcctattt	5460
ttgataatgc	agattgttgg	gaaatctgta	aggaagtaac	tgattccagg	caaattgttt	5520
tcttccttct	acccacccca	acccttacct	atcacctttt	aagaacatag	tacgccagtg	5580
taacgtggga	accatttgaga	ttgtatttgc	cctgagtatt	aaagctagct	tagcaaaaata	5640
cttttaaaaa	catattggta	aatgataccc	ataaaaattaa	attagttata	ttttatttta	5700
aatgcaaaa	tacattgata	tttattaatc	attggattta	gggaaaggga	cagatttttg	5760
gtgaacctga	cttgtggcag	atggtaagga	atattataaa	acatttggat	gagaacaatc	5820
agggcgaact	gcatttttct	gttacactgg	taatcatttg	aaaattgatt	tacctcagtg	5880
tttaacagtt	ttttgttttg	ttttgttttt	taaataataa	ctaattgtcg	agcactgata	5940
gagatgcaga	ttttgggtgg	gggagggtgt	gggggagata	atcacttcac	caactgcagt	6000
gcattttgtg	gtttttaacc	ctcagagaac	tctgcatttt	agggtacttg	aggctgactt	6060
aactaaaagt	tttaaagtaa	ccttttttcc	attgtaaaaa	tttctgtaaa	tactaccaat	6120
tggaatttag	aacagtagag	tacttttctg	aatccaatcc	tatttttatt	ttatacagta	6180
tttctcagct	gtgatctttg	gagcaaaaagc	caacggcagg	aaaaaatagt	ttgtaccagt	6240

ttcatgaagt atgtcttttg gtttttgtaa ataatttttaa ctcaaataaa attgctactt 6300
tcaatac 6307

<210> 29

<211> 5662

<212> DNA

<213> Homo sapiens

<400> 29

atTTTTtagta	gagacgggggt	ttcacCGTgt	tagccaggat	ggTctcgatc	tCctgacCtc	60
atgatccgcc	tgcctcggcc	tctcaaagtg	ctaggattac	aggcgtgagc	caccgtgcct	120
ggccgctgaa	cacaatttaa	agcttcaatt	aatccaggta	ttcagtcaac	aaatatttat	180
agcacacttt	ctgtgtgtga	ggcactattc	taggtgtgct	tggcatataa	aatgaacaaa	240
agtcagccat	cctcgtcctc	atggagttta	tattcttggt	aaacgaaata	gataataaac	300
aagttcatac	acaaagcaaa	cgtaatgact	atgttatgga	gaaaagcagc	agggaaaagg	360
agatacaggg	tgctggatga	ccttaaatag	catggccaag	gaaaacatta	ctgagagaca	420
cacttgagca	aagacctgaa	agcatgcagg	gaatgagttg	tgtgtgtctc	ttgaggacta	480
acagagggaa	caagtacgaa	gagggccac	aggcaggagc	tggcttgga	tggtctagta	540
gtagacagag	gcaggcccg	caaggtagga	agggatagga	gtactcaggg	gccagatcat	600
gcagggcctt	ttcacCGTta	agaactttgg	attttagtat	tacaggagga	ccctcaggg	660
tgtttgacta	ggcgggtatc	atacagtatt	aagggtgagg	atcctgaata	aaaaagggct	720
gtttccagga	caagggtcag	gaagccagac	ttcttcgagg	ttgcttgtag	cggccttgt	780
caggcaatgt	gctcctagag	aatttccttt	gctttgtgtt	tcatctacct	agacagcagt	840
gtattcccca	gaggacgtca	ctatctccag	agaacatatt	ccaattatcc	tgggaaatat	900
gataattggg	attataacag	tactcatttt	ctcaattctc	agaatgaaaa	cctatccaag	960
gcaagaacaa	aagttctcca	gaaagcactc	ccctcccaat	tgtgaaaacc	cagttaacat	1020
tttattagag	ctaccagggt	atgtgaaact	gttgatagtt	ttatcacttt	cctttcaaga	1080
tataggcagg	ggcagtggt	catgcctgta	attccagcac	tttgggaggc	caaggtaggt	1140
ggatggcctg	agcccagaag	ttcaagacca	gcctgggcaa	caaggtgaaa	ccctatctct	1200
acaaaaata	caaaaattag	tggggcatga	tagcatggac	atgtagtccc	agctacttgg	1260
gaggctgagg	tgggaggatg	gcttgaaccc	tggaggtgga	ggttgtagtg	attggagatc	1320
gtgccactac	attccagcct	gggcgacaga	gcaagactct	gtcaccaaaa	aaaaaaaaaa	1380
aaaaaaaaaa	aaaaaatgtg	gccaggcatg	gtagctcaca	cctgtaatcc	cagcactttg	1440
ggaggctgag	ccaggcggat	cacaagggtca	agagatcgaa	accatcctgg	ccaacatgca	1500
aaacaccatc	tctactaaaa	tacaaaaaat	gagctgggtg	tgggtggtgtg	cgcctgtagt	1560
cccagctact	ggggaggctg	aggcagggga	atcgcttgaa	ccagggaggc	agagattgca	1620
gtgagccgag	atcgcgccac	tgcactccag	cctggtgaca	gagcgagact	ccgtctaaaa	1680
aaaaaaaaaa	aaaaatatat	atatatatat	atataatata	tgtatataat	tttacctgaa	1740
agaaggaaat	aaatgggtgc	ttttattcaa	caaataattta	ttgagcacct	actcttgtgc	1800
caggcagctc	tctaggtgct	agggttgtag	cagaaaaaca	gacaggcaga	gatccctgcc	1860
ttcagagggg	gcacaacatt	taagataaac	atgcaaaatg	cctgatatgt	tagatgggaa	1920
gataaatgcc	cttaaagaaa	gtaaagcagg	gacagtgaca	tttaggagtg	aggatgttgc	1980
aacaatttaa	gatagggttg	tcaggggaga	ttcattgaaa	agtcccatct	gagtgaatac	2040
ctagaggaga	gaattgaagc	aggctggtat	ctgggggagt	tgtaggcaga	gggaatagga	2100
aatacaagg	ccctaagggtg	gggaaacagc	aaggagtcag	gtgtgggcag	agcagaaagt	2160
tggggctgca	tgagcaagg	gcagggcctg	gcccacatct	cgtagagctt	tgtaatatata	2220
ccacaacatg	caagtgtaca	atttaacatt	ttattccaca	tccgatggca	aagaaaaatt	2280
gactgctacc	aatatggtag	ttctgacct	gtagttccct	aaatagaatt	ctataagttg	2340
taatacactt	tactacacat	tatcagaaaa	agactaaaag	ttctatttag	taactccaat	2400
tctgacagtt	ctcatgtctg	ggctagaaca	agggcatggc	aatggcagaa	cagatgtctt	2460
ctattttctt	tgcaggattt	tcttttttca	gaggaaagta	caggtagggg	cccactcaag	2520
tggagctcca	ggttaggggg	ttctgtcctc	acccaggcag	cacacaggag	ggcagaggcc	2580
cctcctaagg	gtactacaaa	cttggctctg	atccatgatt	tcagtttctg	acaaacacaa	2640
cattcagtg	gggaaagaaa	atcaggatc	tgagagcttg	cacacaggca	ttctagcaaa	2700
accaaagca	cctactggct	acttgatgtt	agtgtgaaga	ttctcatgaa	atggagacaa	2760
ccattctagg	ggttgagggtg	gccaggggga	tggagcctga	gctgagagaa	ctaagaaaac	2820

```

aaaaacaata caacaaaaag ctgttcagcc atgtgttacc cacactggag ttctgtttgc 2880
tcattctggg gtggaaccca gggccctggg aaggggaatga ggggacttca gggcatttgc 2940
ttgcctcagt ggaagcaggg aggtaaagggg ttaaggtggg ggtacagcct gcagggccag 3000
gagtctgaac tccctccagg aggggccccga ggggtgtctt tagtgtgagc cacacaaggg 3060
tacagagccc agaagagctc tgcttaatat tcatatacta agcttccaca gactaaatag 3120
acacacacac acacacacac acacacactc acacacactt tacttctcaa atcatgtacc 3180
actttctacc agattcaaga acaccaagaa gtactaaagg gtatccaacc gtcaagaaaa 3240
agtttgactc cctcattagt tgtaacatac aagtcttccc atttccttac ttgtaagata 3300
gagtaatgga ctgggaagca gacaaggccc ctgaacagcc tagcatctta cctgatgcat 3360
aggaggttct taatcatctc ccttcctctc cctcatccta acgaaaaata ctagattgct 3420
gtcaaagtgt atgggtatac tttaaatcag tgcttgtcaa actttaatgt gcagcccaat 3480
cagctggggg aatcctgtta aaatgcaggt tctgattcag tggagctggg gtgaggggata 3540
ggaaattatgc gttccttaca ggcttccagg tgatgctaca ctgctgattg gggatcattc 3600
tttgagtggc aagaatttga cactactaag tttcattact taacacaacc atcacataaa 3660
agccctcaaa aggcaccagt ctaaacaata agcccttcca cttcagcctc atgcaggcac 3720
tgaccctgcc aagtgtccag cactagagag gccaggcata atagacatat cctttgggtc 3780
tgggaggatc acgacaccct cctacaggaa gatcttgcaa ttgtttcctc acctcttctg 3840
gttttttgat cttacctttt gcctctgatg ataattacc ttttaattacc acccaccacc 3900
ttgtcatcta aataattata gtaagtgcag cctgcacctc tgccagaaga tctttaaaca 3960
aaatgataaa aacaagttcc taaactgcc aattaaaaaa gagacaaaac tgacccaaat 4020
aaaacagtca tgtgcatccc acccacagt gaagacatgg acttggtttt catataaact 4080
acagaagaag ttgattttat ttgaaacaag aaaaagtact gattcagtat ttaggaaatt 4140
gtaaatgtca gaataataat tctgcagtca ggtaggcaaa acaatccaac cacactaaaa 4200
tccaccttaa attcctcttg ggaagagctg cagggctctc gaactatttt tcctttattt 4260
ggagtttccc cttactatacc ggaggagct ggataacttc tgggtgcatt aaaagcaaat 4320
tatccatttg tgggagaagg gcgggcttct cactgaaagc aattagtagt tttctaattt 4380
cccaggtggg tctccattaa ccgcctaaca aacaccaagg ctgtcggagt ccgacgaatc 4440
atgcacctct cttaggggga actggttgcg ctactcttta gaacgctgtt ttcccatggt 4500
agccttaaaa aaaacttacc aattttctga attaggtaac acattgaatg ggaaaaacct 4560
aagatagcac aaaaaggcgt acagcgaata attaaagact cttcctcccg tcatccgcca 4620
cctcactgtc ctccctagag gcaatcgctg gttcacttct ttaaactttt tattatggaa 4680
aatttcagat acacaagtaa agagactgta tgatgagcac atatgctcgc atcacgcagc 4740
ttcaacgatg aaaaacgttc tgccagcttg ttttattcct ctccccagc tttcataggc 4800
gtattttaca gtccctgacac cagatcactc tgtcaacaca tcagtaggtc ttaaaaaaaaa 4860
aaaaacaaaa aaccataacc acattaccgt taccacaccc aacaaagtta atgataattg 4920
ctcaatacca tccaatattc tcggggccac tttcaatcgg tgagggggcag acggacttag 4980
aggaaggact gcaggcgtgg agggggcgga aaaaagcgagg ggcgacgctg ctcggtggcct 5040
cgggtgtccg gcgcctcgcg gtccccgcca tcgtcaccta cgccgggcca ggaccgacca 5100
ggccaggtcg agggcggtc ttgaccacgc gccccctgcc tcccagctcc cgggcggcg 5160
cctccgcagg cccggcacag ctgcacagcc cgcggtcccc aggcaccggc ggggtccctg 5220
aggggaagcg attgatacag ctgcctgcac tgcgccaccc gcccggtgc ccactctcgt 5280
ggcacctgcg tctcccggt ggcccgggag ctagaagtgg ctgcccagac cgggagggcc 5340
cggccagtcg cccgctccc ccccgcgcc tggccctcgg cccgcgaact cgcggaactg 5400
gactacaact cccgtggggc tccgacggcc gggccaatgg cgggcgccc gagcatgcgg 5460
ggcgagcgc ctgcgcggcg gtttgagtaa gcggtgcgc gattggctgc ggggtcgggc 5520
ggccgcgcgg ggactgtggg aagcggagtg acggagcgag cggctgttgg aggaaggagg 5580
tgggggcccg gaggcgaat ggcgttgaga tggttcaggg ccctgttcaa actccagcac 5640
tgaccattca ccggcggaag cg 5662

```

<210> 30

<211> 4105

<212> DNA

<213> Mus musculus

<220>

<221> modified_base

<222> (1)

<223> a, t, c or g

<400> 30

```

ncggccgcca gggaggccta ggcctgtcc ggccggcgcg cctgaggtgg ggagggaggt 60
tgccggggccg ccgctcacc cccaccccc ctgtcgcccc agcttcctat ttaccgaagc 120
ggagccgcggg actgtgacgg cagcagagcc cctcgcccc ctcggtggca ccggtcggca 180
ctggtctctc gcgcggggct cccgcgccc cccgcggggc gttgggagcc ggagaggcgg 240
aggcggcccc aggccaaagc acccgccagg cgccgagggg aatatgaaac aggtgtcaaa 300
atgacatcca gatttgaaa aacttacagt aggaaaggag gaaatggcag ttcaaaattt 360
gatgaagttt ttccaacaa acggactact cttagtacaa aatggggtga gaccacattt 420
atggctaaat tagggcagaa gaggcccaat ttcaaaccag atattcaaga aattccgaag 480
aaacctaaag tagaagaaga agatactgga gatccctttg gttttgatag tgatgatgag 540
tctctacctg tttcttcaaa aaatttagcc cagggttaagg gttcatctta ctcaaatct 600
agtgaggctg ctgagctgga agaagtcact tctgtatttg aagctaatag caaatgtagt 660
catgtgggtg gtgaagacag ttttgcttcc gacagatgct tacttgtgga ggatacttta 720
attgggaaag agaagagcat aagtagaatt ccagaagaca acgcaaaaca aagtagttgc 780
actaagttgc taacttcaga taaagtggag aatttttagt aagaacatga aaaaaatagt 840
caccactttc acaaaaatgc tgaagatagt actaagaaac ccaatgcaga aaccgcagtg 900
gcttctgaat ataaagctga tgaactaaa gaaacaaatg atacttgga ctccagctct 960
ggaaaaagaa cagagtctcc atctgaaagt tgtccagtc aaggatctgt aagaactggg 1020
ttatatgaat gggataatga ttttgaagat atcaggtcag aagactgtat ttaaagtttg 1080
gataatgagt ctcttttgga gatgaaagac gaggatttaa aaaatcggat tggaggattg 1140
gaaaatctaa atgaaacctt tgaagaagat atcatacaaa gtgttcttag gccaaagcaac 1200
tgtaggacgt actgtagggc caataaagcg agatcctcac agggagcatc aaattttgat 1260
aagctaattg atggcaccag tcagtcctta gccaaagcaa acagtgaatc aagtaaagat 1320
ggcctgaatc aggcaaagaa aggtagtgc aagtgtggga ccagttttcg aggaacagtt 1380
ggacggacta gagattacac tgttttacat ccactctgct tgtcagtggt taatgttacc 1440
atccaggata ctatggaacg gagtatggat gaggttcacc catccactcc tgcagattta 1500
ggagaggctg gccggctcag aaaaaaggca gatattgcaa cctccaagac cactactaga 1560
tttcgacctg gtaatactaa atccaaaaag gatgttaaac ttgaattttt tggttttgaa 1620
gatcatgatg agacaggagg tgatgaaggg ggttctggaa gttctaatta caaaattaaa 1680
tattttggct ttgacgatct cagcgaaagt gaagatgatg atgatgacga ctgtcaagtg 1740
gaaagaaaga aagacaaaaa aagaactaaa acagctccat caccttccca gcagcctcct 1800
cctgaaagca ggcacaattc ccaggatagt cagtctagta ctaataatgc agaaaacttg 1860
gattttacag aggacttgcc tgggtgtgct gagagtgtga agaagcccat aagtaaaaaa 1920
ggagataaat ccaaggaaaa taccagaaag atttttagtg gccccaaacg gtcacctaca 1980
aaagctgtat ataatgccag gcattggaac catccagact cggaagaatt gcctggacca 2040
ccaatagcaa aacctcagcg tgtcacagtg aggtgtctt caaaggaacc aaatcaaaaa 2100
gatgatggag tttttaaggc tcctgcacca ccactcaaag tgataaaaaa tgtgacaata 2160
cctactcagc cctaccaaga aatagttact gcactgaaat gcagaaaaa agacaaagaa 2220
ttatatacgg ttgttcagca cgtgaaacac ttcaatgatg tgggtggaat tgggtgaaaat 2280
caagagttca ctgatgacat tgaatacttg taaagtggct taaagagtag tcagcctcta 2340
aacacacgtt gccttagtgt tatcagctta gctactaaat gtgccatgcc cagttttcgg 2400
atgcatctga gggcacatgg gatggttgca atggtcttta aaactctgga tgattcccag 2460
catcatcaga atctgtccct ctgtacagct gctctcatgt acatattgag tagagaccgt 2520
ttgaacatgg atcttgatag ggccagccta gatctcatga ttcggcttgt ggagttggaa 2580
caagatgcct cttcagctaa gctactgaat gaaaaagaca tgaacaagat caaagaaaaa 2640
atccgaagac tctgtgaaac tgtgcacaac aagcatcttg atctagaaaa cataacgact 2700
ggtcatttag ctatggagac attgctgtcc ctcaactcca aacgagcagg agattgggtt 2760
aaagaagagc tccgacttct ggggtggtctg gatcatattg tagataaagt aaaagagtgt 2820
gtggatcatt taagtagaga tgatgaggac gaagagaaac tagtagcctc attatgggga 2880
gcagagagat gtttacgagt tttagagagt gtaacagtg ataataccaga gaatcaaagc 2940
tacttgatag cctataaaga ttcacaactc attatttcat cagctaaagc attacagcat 3000
tgtgaagacc tgaatcagca gtacaaccgt cctgagaaca gcatctgtgt agcagacagt 3060
aacctctgc cttaccagaa tgtaactaac catgtgggca aagcagtgga ggactgcatg 3120
agggctataa ttggagtatt gctcaattta actaatgata atgagtgggg cagcacaag 3180

```


acaggagaac	aagaaggact	cataggcaca	gcgatgaact	gtgttcttca	ggttccaaag	3240
tacctacctc	aggagcagag	atttgatatt	cgagtgcctg	gattgggtct	actcataaac	3300
ctgggtggagt	atagtgcctg	gaatcgacac	tgccttgtca	acatgcaaac	atcctgttcc	3360
tttgattcct	ccttctctag	tggagaaggc	gatcatagtt	taaggctagc	cggacaagtt	3420
catgctgttc	aagctttagt	gcagctatct	ctcgaacgag	agagagcagc	acaattggca	3480
gaaagtaaaa	cagatgaatt	gattaaagat	gtcctacca	ctcagcatga	taagagtggg	3540
gagtggcaag	aaacaagtgg	agaaatacag	tgggtatcaa	ctgaaaagac	tgatgggtgca	3600
gaggagaagc	agaagaagga	ggaggaggat	gaagaacttg	acctcaataa	agcccttcag	3660
catgctggca	aacacatgga	ggattgcatc	gtagcctcct	acacagccct	gcttcttggg	3720
tgtctctgcc	aggaaagtcc	aatcaatgta	actacagtaa	gggaatatct	tccagaagga	3780
gatttctcca	taatgacaga	gatgcttaaa	aagttcttaa	gcttcatgaa	tcttacgtgt	3840
gctgttggaa	caacaggcca	gaagtctatc	tctagagtga	ttgaatattt	ggaacattgc	3900
tagctgcttt	acctttgctt	caggtgcttg	gtaatgctga	agctatcctt	agacaaagaa	3960
aattggattt	ttatgatcac	ccgatttctt	catcatgcat	tctgcgtttg	ctaaatgaca	4020
gttactacat	caatctgcag	ctatcaaaaa	tgagggaaaa	ggttcaggct	gttaacaatc	4080
ccatgcagta	tttaaataca	cttac				4105